



## *Enhanced Area Equipment: BAR-97 Emissions Inspection System (EIS)*

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**T**he BAR-97 Emissions Inspection System (EIS) is required in all Smog Check stations located in Enhanced Areas, California's smoggiest regions. To find out more about Enhanced Areas and whether your vehicle needs an Enhanced Area test, choose Smog Check from the menu on the Bureau of Automotive Repair's Web site: [www.smogcheck.ca.gov](http://www.smogcheck.ca.gov).

The BAR-97 EIS tests vehicles under simulated driving conditions to detect oxides of nitrogen (NO<sub>x</sub>), hydrocarbons (HC), and carbon monoxide (CO) emissions. These are the major chemical components of smog.

The BAR-97 EIS consists of a 5-gas analyzer, additional hardware, software, a fuel cap tester and a dynamometer with safety restraints. The most distinctive component of the equipment is the dynamometer, a treadmill-like device that simulates driving conditions. When necessary, the BAR-97 EIS can perform the two-speed idle test on vehicles that cannot be physically tested on the dynamometer.

**NO<sub>x</sub> Testing:** NO<sub>x</sub> emissions are generated when the vehicle's engine is hot. These temperatures occur while the vehicle is being driven. Therefore, testing under simulated driving conditions is essential for measuring NO<sub>x</sub> emissions. This type of test is called Acceleration Simulation Mode (ASM). California began NO<sub>x</sub> testing because NO<sub>x</sub> is a key ingredient in ozone smog formation and NO<sub>x</sub> reductions are required under federal law by the U.S. Environmental Protection Agency.

**Enhanced Area Vehicles:** Only BAR-97 ASM tests are accepted in the Enhanced Smog Check Areas of the state. The only exceptions are for vehicles with full-time, four-wheel drive, all-wheel drive, traction control, and specified heavy duty trucks. These vehicles are tested in the two-speed idle mode.

**Stations:** All Smog Check stations in the Enhanced Areas, including Gold Shield, Test-Only, and Referee Centers, are required to have a BAR-97 EIS. Basic Area stations with Enhanced Area customers must use the BAR-97 EIS to test their vehicles.

**Technician License:** To operate the BAR-97 EIS, licensed Smog Check technicians must pass a comprehensive examination and obtain specified certifications from Automotive Service Excellence (ASE - A6, A8 & L1).

**Other Uses:** The BAR-97 EIS can be used as a diagnostic tool. Besides being able to diagnose emissions system problems, Smog Check technicians can use the dynamometer to quickly pinpoint abnormalities that occur when the vehicle is being driven, such as transmission problems.

*California's  
Enhanced Areas  
Are Regions That  
Do Not Meet  
Federal Ozone  
Health  
Standards.*